

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-4, 6-7 and 9-10 are pending before this amendment. By the present amendment, claims 1 and 6 are amended. No new matter has been added.

Examiner Interview

The applicants and applicants' attorney thank the examiner for taking the time for conducting a telephonic interview on June 11, 2010 to discuss the faxed proposed amendment to independent claim 1, which was sent to the examiner on June 10, 2010. The examiner is thanked for allowing the applicants' attorney to explain that the presently claimed apparatus is not disclosed by the examiner's cited references for **only being used as a transmitting antenna**. Also, the applicants' attorney explained how the prior art is not able to disclose that **only** the received downlink signal from the receiving unit is output and then passed through a first feeding line to an input of the divider unit (736) located in the radiating unit (730). Further explained, nowhere is the prior art able to disclose that the divider unit, which receives the amplified downlink signal from the receiving unit (200), is then able to divide this signal for being outputted to a first microstrip patch array antenna and a second microstrip patch array antenna through a second and third feeding lines respectfully, where these second and third feeding lines **only** pass the amplified and divided downlink signal to the first microstrip patch array antenna and the second microstrip patch array antenna, where each of these antennas **only** radiate these respective amplified downlink signals in various predetermined patterns (specification FIG. 9). From this above discussion with the examiner during the telephonic interview in view of our faxed proposed claim

amendment for independent claim 1, the examiner agreed that the examiner's cited references and especially Karabinis fails to disclose or suggest the limitations of our faxed proposed claim amendments sent on June 10, 2010 for claim 1.

In the office action (page 2), claim 6 stands rejected under 35 U.S.C. §112, ¶2 as being indefinite. In response, the applicants have amended claim 6 to depend from claim 1, as respectfully pointed out by the examiner and appreciated by the applicants and applicants' attorney. The applicants respectfully submit that claim 6 is now in compliance. Therefore, withdrawal of the aforementioned rejection to claims 6 is respectfully requested

In the office action (page 3), claims 1-4, 6-7 and 9-10 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,937,332 (Karabinis) in view of U.S. Patent No. 6,198,460 (Brankovic).

The applicants have amended claim 1 to clarify the presently claimed invention and to traverse the examiner's rejection.

The present invention relates to a mobile station for being able to receive **only** a same downlink satellite signal before entering and after leaving a shadow area, where the downlink satellite signal cannot be directly transmitted to the mobile station when the mobile station is traveling through the shadow area. Further, the present invention discloses that the satellite signal the mobile station was receiving prior to entering the shadow station is the same satellite signal being amplified by a receiving unit (i.e., **only** a downlink signal from the same satellite). This **only** amplified downlink signal from the satellite is transmitted though an electrically connected feeding line(s) (wherein the

amplified downlink signal through the feeding line(s) cannot be blocked) to the radiating unit for being radiated to the mobile station as it travels in through the shadow area, wherein the radiating unit having a dual microstrip patch array antenna, wherein the dual microstrip patch array antenna is formed to output a signal from each of the first microstrip patch array antenna and the second microstrip patch array antenna in an asymmetrical or symmetrical radiation pattern, which these antennas **only** radiate the amplified downlink signal that has been amplified in the shadow area for maximizing the amplified downlink signal being received by the mobile station passing through in the shadow area. Claim one has been amended to clarify these novel aspects of the presently claimed invention, where claim 1 now recites, inter alia:

--a feeding unit for directly feeding the received and amplified downlink signal from an output of receiving unit through a first feeding line to an input of the radiating means,
wherein the radiating unit comprises:
a symmetrical dual transmitting antenna provided with a first microstrip patch array antenna and a second microstrip patch array antenna; and
a divider having an input for attaching the first feeding line, wherein the divider divides for dividing the receive and amplified downlink signal, and
wherein the divider has a first output and a second output, wherein the first output only feeds the divided received and amplified downlink signal through a second feeding line to an input of a first portion and,
wherein the second output only feeds the divided received and amplified downlink signal through a third feeding line to an input of a second portion, and passing only the divided received and amplified downlink signal of the first portion to the first microstrip patch array antenna and passing only the divided received and amplified downlink signal of the second portion to the second microstrip patch array antenna,
where the dual microstrip patch array antenna is used only as a transmitting antenna,
wherein the dual microstrip patch array antenna is formed to output a signal from each of the first microstrip patch array antenna and the second microstrip patch array antenna in an asymmetrical or

symmetrical radiation pattern, symmetrically to the divider for only radiating the divided received and amplified downlink signal in the shadow area for maximizing the divided received and amplified downlink signal being received by the mobile station in the shadow area, and

wherein the radiating divided received and amplified downlink signal received by the mobile station is adjustable from any changes to the shadow area and a direction the mobile station travels--.

Support for these limitations can be found at least in the specification at page 9, line 3 to page 10, line 2 and FIG. 9).

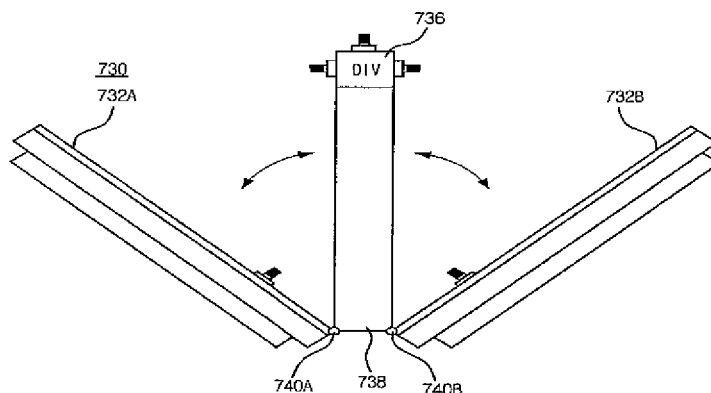
Thus, as agreed to by the examiner, nowhere in the examiner's cited references are the limitation of amended claim 1 disclosed or suggested for having a dual directional microstrip patch array antenna, which is only used as a transmitting antenna such that each of the directional microstrip patch array antennas **only** radiates a **divided and amplified downlink** signal at various angles depending the changing shadow area and direction of the mobile station in the shadow area, where **only** these downlink signals sent through feeding lines from the receiving unit to each of the direction microstrip patch array antennas.

As agreed to by the examiner, the applicants respectfully submit that Karabinis and/or Brankovic, either alone or in combination, fail to discloses or suggests this element of amended claim 1 of the presently claimed invention.

Accordingly, nowhere do the examiner's cited references discloses or suggest the limitation of amended claim 1 for disclosing an apparatus for repeating **only** a downlink signal received from a satellite into a receiving unit, which this downlink signal is enclosed in a feeding line(s) from the receiving unit to each of the directional microstrip patch array antenna for being radiated from each of these directional microstrip patch array antenna to a mobile station in a shadow; a radiating unit for

radiating the amplified downlink signal to the shadow area; and a feeding line(s) for feeding **only** the amplified downlink signal to the radiating unit having the dual direction microstrip patch array antenna.

In contradistinction, FIG. 9, as shown below, of the present invention discloses dual directional microstrip patch array antenna 730 is used **only** as a transmitting antenna received from a satellite to a receiving unit, where the receiving unit feeds this downlink signal to the divider 736 and then **only** transmitting a **divided downlink signal from the divider** through feeding line(s) **from the outputs of the divider to each of the respective inputs of each of the directional patch array antenna 732A and 732B** for radiating the downlink signal at various angles.



As shown above in Fig. 9, the dual directional microstrip patch array antenna 730 includes a first microstrip patch array antenna 732A, a second microstrip patch array antenna 732B, a divider 736 and a supporting member 738 provided with a pair of hinges 740A, 740B, wherein the hinges allow antenna 732A and 732B to be formed **asymmetrically or symmetrically** to the divider for radiation a received downlink signal asymmetrically or symmetrically. As a result, a downlink received signal from the receiving block through a feed line in input to the divider 736, which this amplified

downlink signal is divided by the divider 736 to generate a first downlink signal and a downlink second signal. The first downlink signal is radiated through the first microstrip patch array antenna 732A to **a first direction** and the second downlink signal is radiated through the second microstrip patch array antenna 732B to **a second direction**, which is opposite direction of the first direction and can be radiated **asymmetrically or symmetrically in relationship from the** first microstrip patch array antennas 732A **be compared to the radiated signal from the** second microstrip patch array antennas 732B. Accordingly, this radiation is accomplished by the first and the second microstrip patch array antennas 732A, 732B being able to **rotatable from being** connected to the supporting member 738. Both the first and the second microstrip patch array antennas 732A, 734B are **only transmitting antennas** and a radiating angles of the first and the second microstrip patch array antennas 732A, 732B are **adjusted** by tilting the first and the second microstrip patch array antennas 732A, 734B around the hinges 740A, 740B, respectively. Thus, as agreed to by the examiner, the presently claimed invention is completely different from Karabinis in view of Brankovic.

Therefore, as agree to by the examiner, the applicants respectfully submit that for these above reasons Brankovic and/or Karabinis fails to disclose or even suggest each and every one of the limitations recited in amended 1 of the presently claimed invention, because Karabinis can not disclose receiving **only an** amplified downlink signal from the satellite for being transmitted though an electrically connected feeding line(s) (wherein **only** the amplified downlink signal through the feeding line(s) cannot be blocked) to the radiating unit, which the radiating unit radiates the received downlink signal transmitted through feeding lines from the divider as the mobile station travels in through the shadow

area. The radiating unit has a dual microstrip patch array antenna, wherein the dual microstrip patch array antenna is formed to output a signal from each of the first microstrip patch array antenna and the second microstrip patch array antenna in either an asymmetrical or symmetrical radiation pattern such that these antennas **only** radiate the amplified downlink signal in the shadow area for maximizing **only** the amplified downlink signal being received by the mobile station as the mobile station passes through in the shadow area. Thus, the applicants respectfully submit that claim 1 is in condition for allowance over the examiner's cited references and especially Karabinis.

As to claims 2-4, 6-7, and 9-10, the applicants respectfully submit that these claims are allowable at least since they depend from claim 1, which is now considered to be in condition for allowance for the reasons above.

For the reasons set forth above, the applicants respectfully submit that claims 1-4, 6-7 and 9-10, now pending in this application, are in condition for allowance over the cited references. Accordingly, the applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter. This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

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Respectfully submitted,

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Keith S. Van Duyne
Keith S. Van Duyne, Reg. No. 54,505
Ladas & Parry LLP
224 South Michigan Avenue
Chicago, Illinois 60604
(312) 427-1300